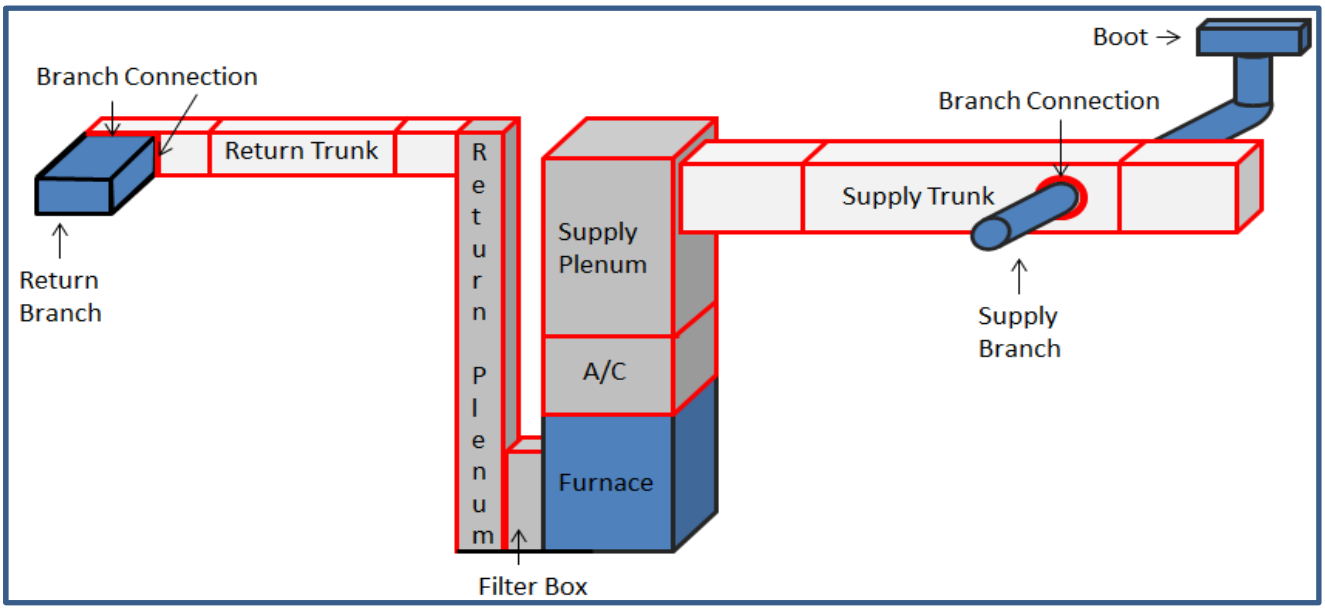
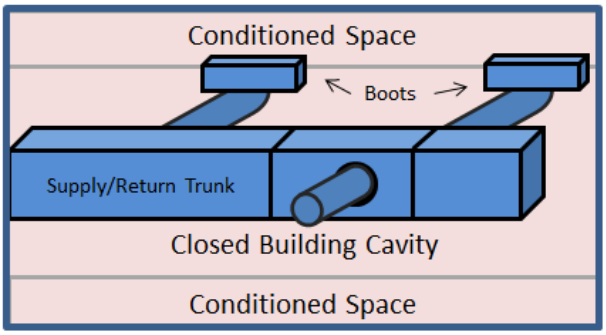
Duct Sealing Guidance

Ducts inside the building envelope

Seal all accessible supply and return plenums (including A/C coil housing and filter box), trunks, and branch connections per the methods outlined in this guidance.



Red lines indicate areas to be sealed. Black lines indicates areas that do not need to be sealed.



Ducts in closed buidling cavites that are between two conditioned spaces do not need to be sealed.

Methods for modeling ducts inside the building envelope in WA:

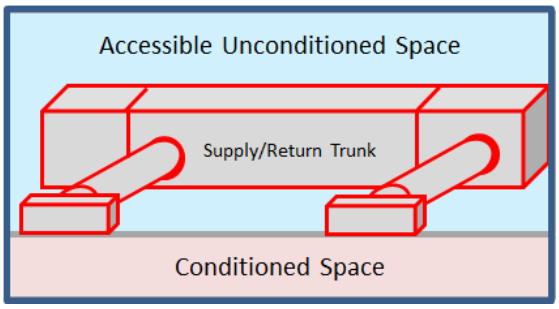
- Include duct sealing as part of a furnace replacement measure, or
- Model duct sealing as an itemized cost with health and safety as the measure type.

Duct Sealing Guidance

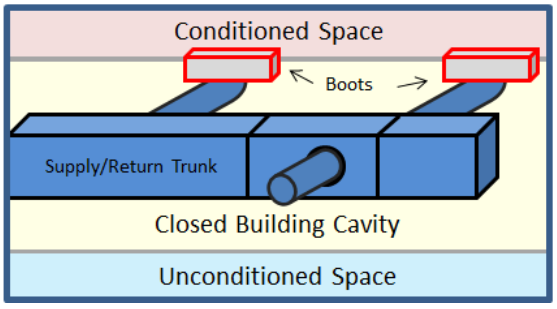
Ducts outside the building envelope

Site built home

Insulate and seal all accessible supply and return plenums (including A/C coil housing and filter box), trunks, branches, and boots per the methods outlined in this guidance. Ducts must be sealed prior to insulating to comply with SWS 4.1601.2b.



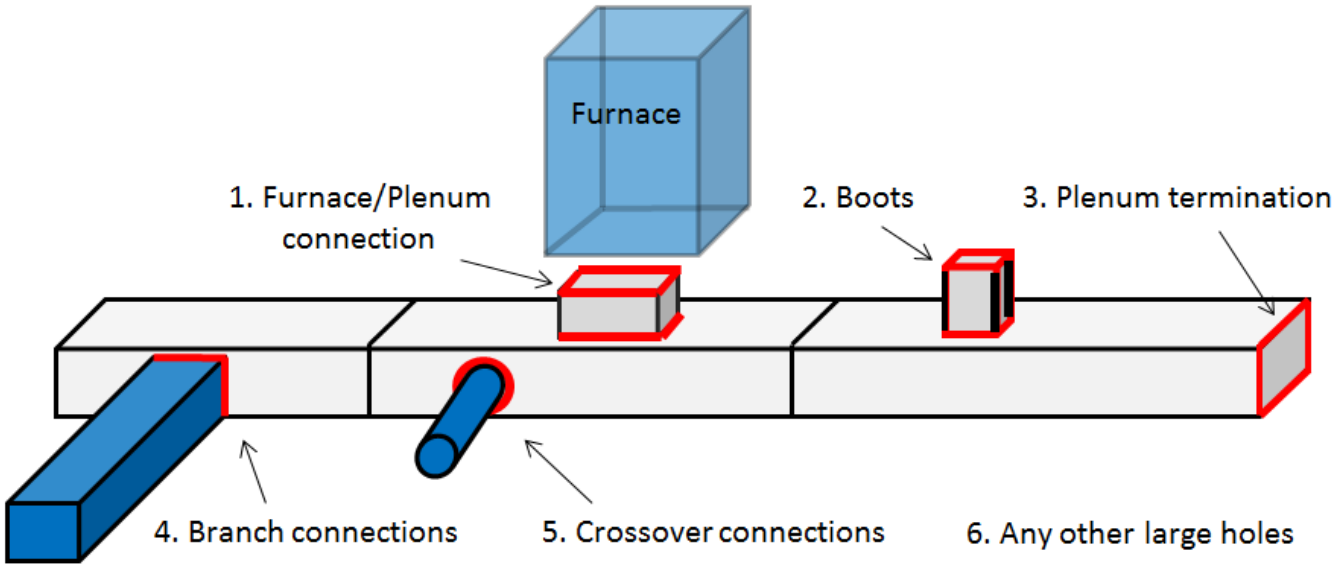
Ducts in accessible attic spaces must be sealed.



Boots in closed buidling cavites that are between conditioned and unconditioned spaces (i.e. tuck under garages or cantilevers) must be sealed.

Manufactured home

Seal the following areas (shown in red) as SIR allows in the following order:



Order of priorities for duct sealing in manufactured homes:

Duct Sealing Guidance

Methods for modeling duct sealing and duct insulation outside the building envelope in WA:

- In NEAT only, when ducts are uninsulated, an HVAC measure to insulate and air seal duct work outside the building envelope can be created using the Uninsulated Supply Ducts button in the Heating Tab, or
- Model as air sealing within the air infiltration measure (follow the MHEA Duct Leakage Modeling Guidance for manufactured homes), or
- Include duct sealing and duct insulation as part of a furnace replacement measure, or
- Model as an itemized cost with health and safety as the measure type.

Methods for Sealing Rigid Metal Ductwork *(per SWS 3.1602.1 Single-Family Homes and per SWS 3.1602.11 Manufactured Housing)*

- Gaps <1/4": up to 10 feet from furnace air handler
    - All Seams, cracks, joints, holes, and penetrations less than ¼" will be sealed using ***fiberglass mesh*** and mastic.
- Gaps <1/4": 10 feet or more from furnace air handler
    - All Seams, cracks, joints, holes, and penetrations less than ¼" will be sealed using mastic.
- Gaps 1/4" - 3/4": All seams, cracks, joints, holes, and penetrations between ¼" and ¾" will be sealed in two steps:
    - They will be backed using temporary tape (e.g., foil tape) as a support prior to sealing
    - They will be sealed using fiberglass mesh and mastic
- Gaps >3/4": All seams, cracks, joints, holes, and penetrations larger than ¾" will be repaired using rigid duct material. Fiberglass mesh and mastic will overlap repair joint by at least 1" on all sides. Fiberglass mesh and mastic will be the primary seal.

Additional Considerations:

New component to new component duct work should be sealed according to 2012 IRC M1601.4.1 (Minnesota Mechanical and Fuel Gas code 603.9), which includes the above methods. Duct tape unlisted for a given application shall not be permitted as a sealant on any duct